

Balco, Inc., 2626 South Sheridan, P.O. Box 17249, Wichita, Kansas 67217-0249
PHONE: 800-767-0082; FAX: 316-945-0789; WEBSITE: www.balcosa.com

SECTION 10 14 44

PHOTOLUMINESCENT AISLE MARKERS

******* Balco, Inc. manufactures numerous metal fabrications for the construction industry including gratings, trench covers, stair nosing, expansion joint assemblies, Fire Barriers in 2, 3 and 4 hour ratings, and floor grids and mats. Balco, Inc. has recently introduced a new line of photoluminescent exit path marking products consisting of stair nosing, handrail illumination strips, demarcation way finding strips, obstacle markers, and directional signs which meet the requirements for the International Building Code 403.16 Section 1024, NFPA 101 and New York City Reference standard RS 6-1 and 6-1A. Photoluminescent products have the advantage of providing highly visible emergency signage and lighting that is non-electric, non-radioactive, durable, maintenance-free, weather-resistant, and UV stable. Balco's photoluminescent products can be used in combination to provide a visible routing system for safe emergency egress after a power failure. These products recharge in daylight or interior lighting and glow safely for over 24 hours.**

This guide can be used to specify IllumiTread Aisle Markers designed for identifying aisles, rows, and seats in a theater or other performance facility with fixed seating.

These products can be used in combination with IllumiTread Stair Nosing and IllumiTread Demarcation Strips and Signs to provide a visible routing system for safe egress after the loss of electrical power. These other photoluminescent products can be specified using the following Balco Product Specifications

**SECTION 05 55 17 - PHOTOLUMINESCENT ALUMINUM STAIR NOSINGS
SECTION 10 14 43 - PHOTOLUMINESCENT EXIT PATH MARKING SYSTEM**

The specifier will need to edit this product specification to reflect the options and applications being used. Most editing can be accomplished by deleting unnecessary requirements.

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PHOTOLUMINESCENT AISLE MARKERS

PART 1 — GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Division-1 General Requirements, apply to the work of this section.

1.02 WORK INCLUDED

- A. Furnish and install Photoluminescent aisle, row, and seat markers for installation in arenas, theaters and other performance facilities to provide a non-electric, discrete, fixed seating identification and way finding system during a performance.
 - 1. Aisle Markers
 - a. Surface Mounted
 - 2. Handrail Strips

1.03 RELATED WORK

- A. Related work which is specified elsewhere.
 - 1. Section 05 55 17 - Photoluminescent Aluminum Stair Nosing: Extruded aluminum stair nosing with an integral photoluminescent strip.
 - 2. Section 10 14 44 - Photoluminescent Egress System: Photoluminescent handrail strips, demarcation way finding strips, obstacle markers, and directional and door signs to provide in conjunction with stair nosing specified in this Section non-electric emergency egress demarcation after electrical power loss.
 - 3. Section 12 61 00 - Fixed Audience Seating.
 - 4. Signage other than Photoluminescent: Section 10 14 00

1.04 REFERENCES

- A. Publications listed herein are part of this specification to the extent referenced. The criteria established in the specifications shall take precedence over the standards referenced herein. (Examples of reference standards are given below.)
 - 1. American Society for Testing and Materials (ASTM):
 - a. ASTM B 221, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes and Tubes.
 - b. ASTM G 155, Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.
 - c. ASTM B 117, Standard Practice for Operating Salt Spray (Fog) Apparatus.
 - d. ASTM D 4828, Standard Test Methods for Practical Washability of Organic

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Coatings.

- e. ASTM D 635, Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.
- f. ASTM D 3648, Standard Practices for the Measurement of Radioactivity.
2. Bombardier:
 - a. Bombardier SMP800-C Toxic Gas Generation Test.
3. International Organization for Standardization (ISO):
 - a. ISO 17398, Safety Colors and Safety Signs – Classification, Performance and Durability of Safety Signs.
 - b. ISO 7010 (2003-10-01), Section E001, E002, E005, E006: Graphical Symbols – Safety Colors and Safety Signs – Safety Signs Used in Workplaces and Public Areas
4. American National Standards Institute (ANSI):
 - a. ANSI Z535.1-2002, American National Standard for Safety Color Code
5. New York City Reference Building Code:
 - a. Standard RS 6-1, Photoluminescent Exit Path Markings
 - b. Standard RS 6-1A, Additional Standards as Required by Reference Standard RS 6-1 for Photoluminescent exit path.

1.05 SYSTEM DESCRIPTION

- A. Photoluminescent Aisle Markers shall be **[bonded to substrate] [mechanically fastened using anchors]** to the substrate.
 1. Aisle Markers shall be **[3-1/2" square with rounded corners] [3-1/2" square with rounded corners and pre-drilled anchor holes] [3-1/2" x 5" with rounded corners] [3-1/2" x 5" with rounded corners and pre-drilled anchor holes] [other dimension(s) as selected and approved by the architect]**
 2. Aisle Markers shall contain **[Section Number] [Aisle Number] [Row Number] [Seat Numbers] (Note to specifier: indicate all appropriate combinations).**
 3. Square and Rectangular Aisle Markers shall have black text on photoluminescent background.
 4. Aisle Marker text shall be **[Arial Black] [Other font as selected and approved by the architect].**
- B. Photoluminescent Handrail Strips shall be 1" in width.

1.06 QUALITY ASSURANCE

- A. Manufacturer: Obtain **[aisle markers] [handrail strips]** through one source from a single manufacturer.
 1. Manufacturer shall be ISO 9001 Certified.
 2. Manufacturer shall have a minimum of ten (10) years of experience.

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- B. Installer: Firm with not less than three (3) years of successful experience in the installation of systems similar to those required by this project.

1.07 SUBMITTALS

- A. Submit manufacturer's specifications and technical data, including Material Safety Data Sheets, installation instructions, as required, and catalog cuts and templates where required to explain construction and to provide for incorporation into the project.
- B. Submit certificates and/or copies of independent test reports or research reports showing compliance with specified performance requirements.
- C. Submit shop drawings showing complete fabrication details for all stair nosing, including required anchorage to surrounding construction.
- D. Submit three (3) 3" samples of the specified system.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Prior to shipment, the manufacturer shall cover the aisle markers and/or handrail strips with a protective material.
- B. Deliver the aisle markers and/or handrail strips to the jobsite in new, clean, unopened crates of sufficient size and strength to protect materials during transit.
- C. Store components in original containers in a clean, dry location.

1.09 WARRANTY

- A. Submit manufacturer's warranty that materials furnished will perform as specified for a period of not less than one (1) year when installed in accordance with manufacturer's recommendations.

PART 2 — PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Furnish and install as noted in specifications and as indicated on drawings, IllumiTread™ photoluminescent aisle markers **[model number(s)] and/or photoluminescent handrail strips (model number(s))** as manufactured by: Balco, Inc., P.O. Box 17249, 2626 S. Sheridan, Wichita, KS 67217; phone: 800-767-0082 or (316) 945-9328; fax: (316) 945-0789, and serves as the standard of quality upon which other products will be judged.

2.02 MATERIALS

- A. Photoluminescent Aisle Markers, **[Manufacturer's model number(s)]**:
 1. Aluminum: ASTM B 209, alloy 6060-T5 for sheet.
 2. Photoluminescent: Phosphorescent pigment shall be Strontium Aluminate Oxide.
 - a. Weatherometer test results shall be 2000 hours when strip is tested in accordance with ASTM G155.

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- b. Shall meet the requirements established herein for Salt Spray resistance when tested in accordance with ASTM B117.
 - c. Shall pass the ASTM D4820 cleaning test.
 - d. Shall pass the ASTM B136 stain resistance test
- B. Adhesive or fasteners required for complete installation in accordance with manufacturer's written installation instructions.
- C. Photoluminescent Handrail Strip:
- 1. Aluminum: ASTM B209, alloy 6060-T5 for sheet.
 - 2. Photoluminescent: Phosphorescent pigment shall be Strontium Aluminate Oxide.
 - a. Brightness Rating shall be or exceed BR 30/8/5 when tested in accordance with ISO 17398.
 - b. Weatherometer test results shall be 2000 hours when strip is tested in accordance with ASTM G155.
 - c. Shall meet the requirements established herein for Salt Spray resistance when tested in accordance with ASTM B117.
 - d. Shall pass the ASTM D4820 cleaning test.
 - e. Shall meet the requirements established in RS 6-1 for flame spread when tested in accordance with ASTM D635.
 - f. Shall meet the toxicity test requirements established in RS 6-1 when tested in accordance with Bombardier SMP800-C.
 - g. Shall meet the radioactivity test requirements established in RS 6-1 when tested in accordance with ASTM D3648.
- C. Adhesive required for complete installation to manufacturer's instructions.

2.03 FABRICATION

- A. Fabricate aisle markers and handrail strips as detailed. Provide adhesive and anchors dictated in the installation instructions and necessary for complete installation.
- B. Provide **[adhesive for installation of Square with Rounded Corners, Rectangular, with anchors for installation]**.
- C. Package components with adhesive and required anchors.

2.04 FINISHES

- A. Aluminum subchannels and tread plates shall be:
 - 1. Mill finish.
 - 2. Clear acrylic lacquer coated for components to be embedding in concrete.

PART 3 — EXECUTION

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3.01 EXAMINATION

- A. Installer shall examine conditions under which work is to be performed and shall notify the contractor in writing of unsatisfactory conditions. Installer shall not proceed until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

- B. Verify that when installed the photoluminescent surface(s) of the aisle markers and/or the handrail strips will be exposed to sufficient activating illumination to ensure the photoluminescent strip will be effectively charged and will meet the required brightness.

3.02 INSTALLATION

- A. Install **[aisle markers] [handrail strips]** in accordance with the manufacturer's written installation instructions.
 - 1. Clean substrate installation area just prior to installation of **[aisle markers] [handrail strips]**.
 - 2. **[Aisle markers] [Handrail strips]** shall be installed in the final stages of construction.
- B. Locate **[aisle markers] [handrail strips]** as indicated in the project drawings.
- C. Work shall be properly aligned, plumb, level, flush with adjacent surfaces, where required, and **[bonded] [rigidly anchored (disc markers only)]** to the substrate.

3.03 CLEANING

- A. Clean exposed surfaces as recommended by the manufacturer.

3.04 PROTECTION

- A. Advise the contractor of procedures required to protect the finished work from damage by work of other Sections during the remainder of the construction period.
- B. Finished units shall be without damage. Units damaged during shipping or construction shall be repaired by the contractor at the expense of the party damaging the material, in accordance with the contract requirements.

3.05 GENERAL RESPONSIBILITY

- A. Any variation from this specification resulting in additional cost to any other contractor or subcontractor on this project shall be the sole financial responsibility of the contractor for the work of this section.

End of Section